Elitech®
MTC–6040 Operating Instructions

Functional Overview

Applied to the temperature and humidity control applications,automatical control of cooling,humidity,fans,lighting and other loads.

The technical requirements

1.Working conditions,
  1.1 Operating Voltage: 220-240 VAC, 50 ~ 60Hz;
  1.2 compressor relay contact capacity: 16A; fan relay contact capacity: 7A;
  1.3 Working temperature: -15 °C ~ 60 °C.
2.Features, safety requirements:
  2.1 A temperature measuring range: - 4 0.0 ~ 50 .0 °C, the minimum display resolution :0.1; Accuracy: ± 1.0 °C;
      Humidity display range: 0% RH ~ 100RH%, display resolution is 1;
      Accuracy: ± 3% RH (25 °C)
  2.2 Meet the Gb4706.1-2005 safety standards.

Display panel and buttons introduction

Buttons from top to bottom, from left to right as follows: power key; Set button; alarm mute button, OK button; up key, down key. For operation of the controller.

Parameter settings and Operations.

The controller displays the measured temperature and the humidity measured under normal conditions, the big display window shows the measured temperature and the small display window shows the measured humidity. Display "E1" when the temperature sensor failure. "E2" when humidity sensor failure.

1.Parameter setting method
 Control temperature setting.
 Under the normal conditions,press the setting button for more than 3s the "temperature setting"indicator lights; temperature display shows the current stop control temperature and the humidity display shows "SEt".Then press "▲""▼" can adjust the control temperature,when adjusted to the appropriate expectations,press the OK button to confirm,all values be saved and enter the hysteresis temperature setting.The "hysteresis temperature"indicator lights.Temperature display shows the hysteresis temperature and the humidity display shows"Hy"Then press "▲""▼"can adjust the compressor hysteresis when adjusted to the appropriate expectations,press the OK button to confirm,all values be saved and enter the temperature correction setting.The "correction setting"indicator lights.Temperature display shows the correction temperature and the humidity display shows "ot"Then press "▲""▼"can adjust the correction value when adjusted to the appropriate expectations,press the OK button to confirm,all values be saved and enter the humidity correction setting,the humidity correction indicator lights.Temperature display shows the humidity correction value and the humidity display shows "oh".Then press "▲""▼"can adjust the correction value when adjusted to the appropriate expectations,press the OK button to confirm,all values be saved and enter the high temperature alarm setting.The "high temperature alarm" indicator lights.Temperature display shows the related alarm temperature and the humidity display shows " EH" .Then press "▲""▼"can adjust the alarm value ,when adjusted to the appropriate expectations,press the OK button to confirm, all values be saved and enter the low temperature alarm setting ,the "low temperature alarm "indicator lights.Temperature display shows the related alarm temperature value and the humidity display shows "EL ".Then press "▲""▼"can adjust the alarm value ,when adjusted to the appropriate expectations,press the OK button to confirm,all values be saved.Then back to the normal operation.Temperature setting range: 2.0 to 20.0;.

Parameter Display	Description	Min	Max	Unit	The default value	Remark
SET	Temperature setpoint	2	20	oC	5	Compressor shutdown temperature
HY	hysteresis	0.1	15.0	oC	2	Compressor on, the stop temperature difference
OT	Temperature correction	-10.0	10.0	oC	0.0	The temperature difference between the measured value and the display value
OH	Humidity correction	-10	10	%RH	0	The humidity difference between the measured value and the display value
EH	High temperature alarm relative value	0	25	oC	3	Relative to the set temperature +hysteresis difference between the higher temperature alarm
EL	low temperature alarm setpoint	0	25	oC	3	Relative to the set temperature lower than the temperature difference

Administrator menu settings：
   Press the "▲"and "setting" button at the same time enter the administrator menu setting,humidity display shows the menu items and the temperature display shows current set parameter value.Then press "▲""▼"to adjust values,press OK button to save the parameters and switch to the next menu.When switch to the last menu press the OK button again then switch to the first menu item.No operation in more than 30s,auto saved and quite the setting state.
   Press more than 3s to force switch on/off .
The "compressor" indicator lights when compressor is working; the "compressor" indicator flashes when compressor is in time delay state; the "compressor" indicator turns off when compressor is not working.

Menu description

The controller parameter management menu

Parameter	Description	Min	Max	Unit	The default value	Remark
T1	Fan delay start time	00	240	s	60	
T2	Fan stop delay time	00	240	s	60	
T3	Boot alarm delay	0	60	h	10	
T4	Temperature alarm delay	0	60	m	10	
T5	Humidity high alarm setting	T6	99	%RH	75	
T6	Humidity low alarm setting	0	T5	%RH	10	
T7	Humidity alarm delay	0	200	m	10	
T8	Compressor start delay	0	15	m	3	
T9	Door switch alarm delay	0	15	m	5	
T10	Humidity control settings	10	99	%RH	60	
T11	Humidity control hysteresis	1	50	%RH	15	
T12	Humidity control mode	0	2	-	0	0：no humidity control 1：humidification 2：Dehumidification
T13	The third relay function	0	3	-	0	0：not enabled. 1：Lighting 2：humidity control 3：Alarm relay.
T14	Fan operating mode	0	3	-	0	0、start /stop same as compressor（controlled by T1、T2），start when door opened 1、start /stop same as compressor（controlled by T1、T2），stop for 3mins when door opened. 2、Work continuous，stop for 3mins when door opened. 3、Work continuous，start when door opened.
T15	Allow to use the power button	0	1	—	1	0：The power button is invalid；1：Power Button effective

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Temperature sensor calibration value
Temperature sensor calibration error
Display temperature =measured temperature +correction value

Humidity Sensor Calibration value
Humidity sensor calibration error
Display humidity =measured humidity +correction value

Compressor delay start
When the compressor first start, need a extend time

High temperature alarm settings
When the measured temperature is higher than the set temperature + hysteresis temperature, and exceeds high temperature alarm setting and finishes the temperature alarm delay time, the alarm beeps.
During alarm, temperature value and Ht displays in turn.

Low temperature alarm settings
When the measured temperature is lower than the set temperature - low temperature alarm setting, and finishes temperature alarm delay time, the alarm beeps.
During alarm, temperature value and Lt displays in turn.

Boot alarm delay
After the first power on ,delay time display is allowed.

Alarm delay
The delay interval between over limit temperature occurring and alarm happening.

High humidity alarm settings
When the measured humidity is higher than the high humidity alarm setting and finishes the humidity alarm delay time, the alarm beeps.
During alarm, humidity value and Hr displays in turn.

Low humidity alarm settings
When the measured humidity is lower than the low humidity alarm setting and finishes the humidity alarm delay time, the alarm beeps.
Alarm humidity value and Lr displays in turns.

Humidity alarm delay
Delay time between over humidity and the alarm value displays.

Compressor delay time
Time between compressor stop and next start.
Alarm mute: When the buzzer alarm, press the alarm silence button to eliminates the alarm sounds, but still maintain the alarm codes and alarm relay output (when the third choice for the alarm relay output)

Humidity Control
0：no humidity control
1：humidification
2：dehumidification

The third relay function
0:no use；1:light；2：humidity control；3：alarm relay

Fan operating modes：
1.start /stop same as compressor（controlled by T1、T2），stop for 3mins when door opened.
2.start /stop same as compressor（controlled by T1、T2），status unchanged if door is open.
3.Work continuous，stop for 3mins when door opened.
4.Work continuous，start when door opened.

6.Control
 Compressor：
 Power requirements：
  When the measured temperature is higher than the set temperature plus the temperature hysteresis value，and meet the relay time，compressor starts

 Shutdown condition：
 When the measured temperature is below the set temperature, the compressor relay is turned off.

 Fan Relay：
 Start and stop according to fan mode。

 The third relay：
 In accordance with humidity control mode and the third relay function mode selection determines the start and stop.

3. Wiring diagram